STATEMENT OF BASIS

IRP SITE NO. OT-100 CATTLE DIPPING VAT - SHOAL RIVER

EGLIN AIR FORCE BASE, FLORIDA

OBJECTIVE

This Statement of Basis (SB) explains the proposed remedy for Installation Restoration Program (IRP) Site No. OT-100 Cattle Dipping Vat - Shoal River, designated in the U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) Hazardous and Solid Waste Act (HSWA) Permit (the Permit) for Eglin Air Force Base (Eglin) as Solid Waste Management Unit (SWMU) OT-100. The site is located on Eglin, and managed under the Air Force IRP. The SB is intended to identify the proposed remedy for the site, to explain the rationale for the remedy selection, and to solicit public review, comment, and involvement in the remedy selection process. A glossary which defines some of the technical terms contained herein is included at the end of this document.

A Preliminary Assessment (PA), a Site Investigation (SI), and an Interim Corrective Measures (ICM) have been completed at IRP Site No. OT-100. This environmental work is summarized below. The ICM Report (REI, March 1999) recommended No Further Investigation Action with Land Use Controls (LUCs). The LUCs restrict future development of the site. This remedy will protect human health and the environment. To implement the LUCs, a Land Use Controls Implementation Plan (LUCIP) will be developed by the Air Force for this site. The LUCIP will be approved by the EPA and will also serve as the Corrective Measures Implementation Plan (CMIP), as required to implement a remedy, pursuant to RCRA.

The public is invited to comment on this proposed remedy for IRP Site No. OT-100, or any other remedial alternatives, including those not previously studied. This SB includes information on how the public may participate in this decision-making process.

INTRODUCTION

IRP Site No.OT-100 is regulated in the Permit for Eglin, issued by EPA Region IV, effective September 16, 1986, and reissued April 26, 1998. This SWMU is regulated under the Permit, which requires that the SWMUs be investigated, remediated, and closed. The Permit requires that an SB be prepared which identifies the proposed remedy for the site, explains the rationale for the remedy selection, and allows for a Public Comment Period of 45 days.

The EPA - Region 4 will finalize the remedy selection decision, by modifying the HSWA Permit to incorporate the corrective measure, subsequent to Florida Department of Environmental Protection (FDEP) review of, and concurrence with, this SB, and the public comment period has ended. All information submitted during this time frame will be reviewed and considered before final approval. Eglin, EPA, and FDEP have entered into a memorandum of agreement (MOA) which

outlines the LUCs as described in the EPA Region 4 Memorandum, *Assuring LUCs at Federal Facilities,* dated April 21, 1998. This MOA can be found in Eglin Administrative Record. This MOA serves as Eglin's LUCAP. A LUCIP will be developed by the Air Force IRP and will serve as the CMIP. The LUCIP will be implemented in accordance with EPA Policy. This SB provides a summary of past investigation work performed at IRP Site No. OT-100. However, the SB is not considered a substitute for the actual technical documents developed for this site. The MOA and the EPA- Region 4 Memorandum, and other documents can be found in the Eglin Administrative Record, which is available for public review (see last section of this SB for locations).

BACKGROUND/HISTORY OF IRP SITE NO. OT-100

Eglin AFB is located within the Eglin Military Reservation in the Florida Panhandle. The Eglin Military reservation comprises an area of approximately 740 square miles and includes portions of Okaloosa, Walton, and Santa Rosa Counties. IRP Site No. OT-100 Cattle Dipping Vat - Shoal River is located in Okaloosa County, Florida, approximately four miles south of the city of Crestview (Figures 1 and 2).

The following is a list of the principle historical documents for IRP Site No. OT-100, which are available for public review at the locations provided in the last section of this SB:

- *Preliminary Assessment Report POI No. 300 Cattle Dipping Vat - Shoal River,* submitted January, 1997 (REI, January 1997);
- *Site Investigation Work Plan POI No. 300 Cattle Dipping Vat - Shoal River,* submitted February, 1997 (REI, February 1997);
- *Site Investigation Report POI No. 300 Cattle Dipping Vat - Shoal River,* submitted April, 1998 (REI, April 1998); and
- *Interim Corrective Measures Report IRP Site No. OT-100 Cattle Dipping Vat - Shoal River*, submitted in March, 1999 (REI, March 1999).

The site is situated within the north-central part of the Eglin Reservation just south of the Shoal River, within the river's floodplain. The terrain is wooded and generally level with a gentle slope northward toward the river (Figure 3). Dominant trees are slash pine and water oak with isolated stands of live oak. Scrub oak, palmettos and grasses constitute the underbrush.

The cattle dipping vat was demolished during ICM activities, which are described below. The structure was constructed of concrete and exhibited a few cracks along its sides. The dimensions of the cattle dipping vat were approximately 25 feet long by 3 feet wide and approximately 4 feet deep. A 10-foot by 10-foot concrete platform existed on the southern side of the structure. This platform was the drip pad used to catch the solution dripping off of the cattle following the dipping activity. No evidence of a larger drip pen was distinguishable at the north end (entrance) of the vat.

The cattle dipping vat was located in a generally dry area of sandy soils, pine needles, and other organic matter. No significant erosion features were observed near the site.

Geologic literature indicates that the surficial aquifer beneath the site extends to an approximate depth of 20 feet below land surface (bls; Hayes and Barr, 1983). The Pensacola Clay, an aquiclude which separates the surficial aquifer from the underlying Floridan aquifer system, is approximately 250 feet thick and extends to a depth of approximately 270 feet bls (Hayes and Barr, 1983; Maslia and Hayes, 1988). The surficial aquifer occurs under water-table conditions. The depth to groundwater is approximately two to five feet bls. The groundwater flow direction within the surficial aquifer has a northward component towards the Shoal River, which is located approximately 0.6 miles from the site.

IRP Site No. OT-100 Cattle Dipping Vat - Shoal River was associated with the Cattle Tick Fever Eradication Program, which was a Federally funded program in ten southern states, including Florida. The state of Florida enacted it in 1917 and discontinued it in 1944. This program is described in more detail in REI (1998). Common constituents of the cattle dipping vat solutions used to fight the disease-causing tick included arsenic, chlordane, dichlorodiphenyltrichloroethylene (DDT), dichlorodiphenyldichloroethylene (DDE), dichlorodiphenyldichloroethane (DDD), alpha-HCH, beta-HCH, and toxaphene (Woodward-Clyde, 1995).

A report prepared by the Florida Department of Environmental Protection (FDEP), entitled *A Risk-Based Approach to the Protection of Human Health and Management of Environmental Impacts at Florida's Cattle Dip Vat Sites* provides a ranking system to determine which cattle dipping vat sites warrant assessment and/or remediation, and what the priority is to remediate the site (FDEP, November 1995; Woodward-Clyde, January 1995). To determine if remediation of a site is warranted, the analytical data are compared to Acceptable Soil Concentrations (ASCs). These screening values were developed by FDEP for four site land use categories, based upon the exposure risk to potential human receptors. These land use categories are as follows: Residential, Commercial/Industrial, Restricted I, and Restricted II. The lowest Acceptable Soil Concentration is used with the Residential land-use category which involves potential contact on a full-time or nearly full-time basis. The land use category with the highest Acceptable Soil Concentration of the four is the Restricted II category which involves infrequent site contact (Woodward-Clyde, January 1995).

Based on this land use category system, IRP Site No. OT-100 is considered Restricted II, because it is located in a nonresidential, remote, heavily wooded area of the Eglin reservation. Visitors, which include Eglin personnel involved in training exercises or other related activities, and recreators, access the site infrequently. No schools, private residences, or daycare facilities are present within a one-mile radius of the site. The Shoal River is located approximately 0.6 miles to the north. The river is open for recreational boating and fishing, and a public boat ramp is located on the east side of S.R. 85 (Figure 2).

The Cattle Dipping Vat - Shoal River was originally identified as Point of Interest (POI) No. 300. A PA was conducted at the site in 1996 and included a review of historical data, interviews, and a site reconnaissance (REI, January 1997). An SI was conducted at the site in 1997 to determine the presence or absence of environmental contamination (REI, April, 1998). The activities, results, and recommendations of the SI are summarized below. The identification number of the site was changed from POI No. 300 to IRP Site No. OT-100 at the conclusion of the SI.

The SI entailed the collection of soil and groundwater samples. The SI analytical data were evaluated to determine Contaminants of Potential Concern (COPC) using a two-tiered screening approach (Tier I and Tier II) for establishing COPCs based on comparison of analytical data to a comprehensive list of Applicable or Relevant and Appropriate Requirements (ARARs) and risk-based guidance concentrations. The Tier I Screening Levels for each of four media: soil, groundwater, surface water, and sediment are the minimum ARAR, if an ARAR exists, or the minimum guidance concentration, if no ARAR exists. The Tier II Screening Levels are the calculated Eglin basewide background concentrations for the inorganic analytes and some selected pesticides. The COPC screening approach utilized during the SI at the Cattle Dipping Vat-Shoal River is described more fully in a separate volume entitled *Guidelines for COPC Identification at Eglin AFB, Revision 2* (Eglin, March 1998).

The following summarizes the SI results applicable to this SB:

- Thirty-one soil samples were collected for laboratory analyses during the SI in several sampling events. No Target Compound List (TCL) Volatile Organic Compounds (VOCs), TCL Semi-Volatile Organic Compounds (SVOCs), TCL Pesticides, or TCL Polychlorinated Biphenyls (PCBs) were detected at concentrations above their respective Tier I Screening Levels in the soil samples collected from the site.
- One Target Analyte List (TAL) Inorganic (arsenic) was detected at concentrations above its Tier I and Tier II Screening Levels in several surficial (zero to one foot bls) soil samples collected during the SI soil sampling events. Some of these detected arsenic concentrations in these soil samples were also above the arsenic Florida Soil Cleanup Goal (FSCG) and the U.S. EPA Region III RBC for Industrial Soils.
- The results of an extended soil sampling event confirmed the presence of elevated arsenic and evaluated the lateral extent of the inorganic constituent in surface soils. Arsenic was also detected at a concentration above its Tier I and Tier II Screening Levels in one subsurface soil sample (P-300-SB-10-4) collected from two to four feet bls during the extended soil sampling event. Results from the SI soil sampling indicate that elevated arsenic concentrations were present in soils within a 40-foot radius of the cattle dipping vat. The arsenic concentrations generally decreased with increasing lateral distance from the vat.
- Groundwater samples were collected from four monitoring wells installed near the cattle dipping vat and submitted to the laboratory for analyses. The monitoring wells were located between 10 and 25 feet from the cattle dipping vat. No TCL VOCs, TCL SVOCs, TCL Pesticides, or TCL

PCBs were detected at concentrations above their respective Tier I Screening Levels in SI groundwater monitoring well samples.

- One TAL Inorganic (arsenic) was detected at a concentration above its Tier I and Tier II Screening Levels in the groundwater samples. This detection occurred in only one monitoring well, OT-100-MW-04A, which was the closest monitoring well to the cattle dipping vat. It was located within ten feet of the structure. The groundwater sample collected from OT-100-MW-04A exhibited a slightly elevated turbidity of 76 Nephelometric Turbidity Units (NTUs). Therefore, some of the arsenic detected in the sample may be from the solid particles that caused the high turbidity. The arsenic concentration in this groundwater sample, therefore, may not represent actual groundwater quality. Rather, it could be an exception caused by local factors (for example, clay and silt-sized soils being able to enter into the well through the well screen) that caused the increased turbidity. The groundwater samples from the other monitoring wells at IRP Site No. OT-100 exhibited arsenic concentrations below the safe Tier I criteria as well as low turbidities, which supports this likelihood.

The following COPC was identified in soil and groundwater for IRP Site No. OT-100 during the SI:

- **Metals:** Arsenic

The Eglin Tier I Partnering Team, which is comprised of Eglin Project Managers, EPA and FDEP representatives, and environmental contractors who work at the base, decided to proactively perform an ICM at IRP Site No. OT-100 to reduce the risk posed by the arsenic-impacted soil at the site. The ICM activities were accomplished in December 1998 and included excavation and off-site disposal of arsenic-impacted soils and site restoration. The clean-up goal for this ICM was 36 milligrams per kilograms (mg/Kg). This value corresponds to a risk level of 1E-6 for the Restricted II land use category (which means it receives infrequent visitors; FDEP, 1995). The ICM tasks accomplished were as follows:

- Excavated approximately 310 cubic yards (463 tons) of arsenic-impacted soils from the ground surface to approximately two feet bls across the site and excavated to approximately four feet bls (below land surface) within a three-foot radius of the cattle dipping vat structure
- Because of the shallow occurrence of groundwater at the site, the excavation retained approximately 5,600 gallons of water over the duration of the ICM work. This water was pumped into a fractionation tank, transported off site, and disposed of properly.
- Removed the concrete cattle dipping vat structure and associated drip pad;
- Placed soil directly into dump trucks, and based upon required laboratory analyses, transported the material to a Subtitle D landfill;
- Conducted confirmatory sampling from the bottom and edges of the excavation and submitted the samples to the laboratory for arsenic analyses (24-hour turnaround time);

- As warranted by the confirmatory sample results, performed further horizontal excavation to remove any soil where concentrations of arsenic existed above its cleanup level;
- Placed clean fill soil into the excavated area; and
- Completed restoration activities, including replanting of the ground cover.

On the basis of the soil samples collected during the SI and the ICM, the maximum arsenic concentration in the surface soils (zero to one feet bls) currently on site is 13 milligrams per kilogram (mg/Kg). The maximum arsenic concentration on site within the subsurface soil is 140 mg/Kg (detected in a soil sample collected from 4 to 6 feet bls). This maximum arsenic concentration in the subsurface soil is above the cleanup goal of 36 mg/Kg. It was infeasible to excavate this soil, because it was saturated and presented unstable excavation conditions. The volume of arsenic-impacted subsurface soil remaining at the site is very small, as demonstrated by deeper and lateral confirmation soil samples that exhibited arsenic concentrations below the cleanup level. The locations of the elevated arsenic concentrations were covered with four feet of clean fill soil.

PROPOSED REMEDY

It is recommended that No Further Investigation Action with LUCs be implemented for the soils at IRP Site No. OT-100, which is located in a remote area of Eglin. The land use designation for the site is military training and recreational uses, such as hunting and hiking. Future land use is not expected to deviate substantially from the current land use. Should a change in current land use be required, it will be managed in accordance with the LUCAP and the LUCIP.

This remedy complies with each of the standards presented in EPA's *RCRA Corrective Action Plan* (U.S. EPA, 1994) as follows:

- *Protect Human Health and the Environment*. The proposed remedy reduces the soil and groundwater exposure pathways to humans, and hence poses acceptable risks, under the land use scenario of a Restricted II category (Woodward-Clyde, January 1995). The LUCs ensure that the Restricted II criteria will be maintained. That is, the site will continue to be in a nonresidential, remote, heavily wooded area of the Eglin reservation with infrequent visitors. No schools, private residences, or daycare facilities will be established within a one-mile radius of the site. The removal of the arsenic-impacted soils at the site and the installation of clean soil cover during the ICM reduced the long-term risk to the environment by inhibiting exposure to ecological receptors.
- *Attain Media Cleanup Standards Set by Implementing Agency*. The proposed remedy complies with FDEP's Acceptable Soil Concentration (ASC) for arsenic at cattle dipping vats under a Restricted II Land-Use category (Woodward-Clyde, January 1995).
- *Control the Source of Releases so as to Reduce or Eliminate, to the Extent Practicable, Further Releases that may Pose a Threat to Human Health and the Environment*. The removal of the

arsenic-impacted soils at the site and the installation of clean soil cover during the ICM eliminated, to the extent practicable, the arsenic-impacted soil as a source of additional contamination to the environment at IRP Site No. OT-100.

- *Comply with any applicable standards for management of wastes*. The ICM activities at IRP Site No. OT-100 complied with the applicable standards for management of wastes. Soil samples were collected from soils that exhibited the highest arsenic concentrations and analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) for arsenic. The results of these analyses indicated that the soil was nonhazardous; hence, it was transported and disposed of at a Subtitle D receiver facility.
- *Other Factors*. The determination of the proposed remedy also took into account other factors noted in U.S. EPA (1994), including Technical Feasibility, Costs, Long Term Effectiveness and Permanence, Short Term Effectiveness, and Community Acceptance.

Current and future use of the property will be limited to maintain the exposure assumptions that are the basis of the Restricted II category, used to establish the arsenic cleanup goal of 36 mg/kg. The Restricted II category, as described in the Woodward-Clyde Cattle Dipping Vat Assessment Report (1995), is infrequent site contact. Examples may include campgrounds in state parks, hiking trails away from population areas, and agricultural sites where farming practices result in very limited site contact (two weeks total per year or less). No development of the property will be allowed without the proper engineering controls. Depending on the location, nature, and intensity of potential future land use activities, the Air Force will conduct additional site investigation and assessment activities to determine the proper engineering controls if existing information is not adequate.

The following sections summarize the findings supporting the proposed remedy and outline the proposed LUCs and their implementation.

NATURE OF CONTAMINANTS/SUMMARY OF RISKS

As noted above, arsenic is the only COPC identified at IRP Site No. OT-100. During the SI, the lateral and vertical extent of the arsenic-impacted soils were delineated. Laterally, these soils extended up to forty feet from the vat. Vertically, the arsenic-impacted soils were constrained to the upper two feet of soils, except locally (within about three feet from the cattle dipping vat) where the arsenic was identified down to approximately six feet bls.

No formal site-specific risk evaluation has been performed. Instead Eglin used the FDEP's Acceptable Soil Concentrations (ASCs) as the target goal for the ICM activities. These risk-based soil criteria numbers were developed based on a 1E-6 risk for carcinogens for a particular land use scenario (FDEP, 1995; Woodward & Clyde, 1995).

Eglin proactively performed the ICM (which, as described above, consisted of removal and off-site disposal of the arsenic-impacted soil) in December 1998 (REI, March 1999). This ICM adequately removed the arsenic concentrations that represented a risk of greater than 1E-6 (on the basis of the ASCs) in the upper two feet of soil at the site.

Human health cancer risks considered acceptable by EPA for selecting remedies under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP; Title 40 of the Code of Federal Regulations Part 300) fall within the range of 1E-6 (one in a million) to 1E-4 (one in 10,000). EPA uses a cumulative risk calculation in which all risk drivers (contaminants), all exposure pathways, and all media (groundwater, soil, surface water, and sediment) are totaled for each exposure group. FDEP further looks at the lifetime cancer risk for each individual risk driver in a single medium. For protection of human health, the FDEP cleanup goal is to achieve a maximum excess lifetime cancer risk of 1E-6, for each individual risk driver. In other words, a typical person exposed to a chemical carcinogen at the FDEP cleanup goal and at a specific frequency could expect an increment of one chance in a million increase, above their existing lifetime cancer risk. FDEP considers site-specific cleanup levels greater than 1E-6, if technical unfeasibility, disproportionate costs, or other relevant factors justify their impracticablitiy. These levels, however, must be based on the ability to achieve an equivalent risk management level of 1E-6 through reliable institutional controls or other effective means that manage the extent and frequency of exposure.

In addition to the soils, arsenic was detected locally in a groundwater sample from one monitoring well at the site at concentrations that exceeded the Federal Maximum Contaminant Level (MCL) for drinking water. The data from this sample is suspect, because the turbidity of this sample was slightly elevated. This indicates that the detected arsenic may have been adsorbed to the solid particles in the sample and hence not represent groundwater quality. The location of this monitoring well was within a few feet of the cattle dipping vat. No arsenic was detected in monitoring wells located as close as 20 feet downgradient of the cattle dipping vat. In addition, the cattle dipping vat and the surface arsenic-impacted soils, which represent the potential sources of arsenic contamination in the groundwater, have been removed from the site. The surficial aquifer underlying the site is not being utilized by individuals within a 1,000-foot radius.

PROPOSED REMEDY IMPLEMENTATION

The recommended corrective action for IRP Site No. OT-100 Cattle Dipping Vat - Shoal River, is No Further Investigation Action with Land Use Controls (LUCs) for the soils.

These recommended corrective actions will apply as long as the current and expected land use designation/exposure scenario remains essentially unchanged. The specific requirements of these land use designation/exposure scenarios will be presented in the LUCIP, which Eglin will develop to address IRP Site NO. OT-100 specifically. This LUCIP will provide detailed means to prevent exposure to the soil at the site.

The LUCs will prevent future inappropriate development of the site and consist of the following:

- The site will be restricted from residential development without proper engineering controls. Depending on the location, nature, and intensity of potential future land use activities, the Air Force shall conduct additional site investigation and assessment activities to determine the proper engineering controls if existing information is not adequate.
- Maintenance of existing utilities or replacement of existing utilities in the same location is allowed.
- The property will be inspected at least annually to ensure that unauthorized use of the property does not occur and that status of the property is unchanged. The Air Force will submit an annual site status report to both the EPA and FDEP, in accordance with the mutually approved LUCAP.
- The Air Force will notify EPA and FDEP immediately upon the discovery of any unauthorized change in land use.
- Every 5 years the facility will prepare a review of the remedy effectiveness and submit the report to the implementing agency. Eglin may at any time present additional information for remedy modification, including but not limited to discontinuing the remedy.
- For requests for major land use changes, written requests will be submitted to both the EPA and FDEP, in accordance with the mutually approved LUCAP. Requests will be submitted as soon as a major land use change is anticipated, to allow sufficient time for regulatory review and amendments to remedy selection decision documents. The requests for regulatory reviews will be made no less than 90 days prior to the anticipated land use change. Major land use changes include any change in land use (e.g., from industrial or recreational to residential) that would be inconsistent with those specific exposure assumptions in the human health and/or ecological risk assessments that served as the basis for the LUCs; any site activity that may disrupt the effectiveness of the implemented LUC (for example, excavation at a landfill; a construction project that may impact ecological habitat protected by the remedy; removal of a fence; unlocking of a gate; or removal of warning signs; or any site activity intended to alter or negate the need for the specific LUC(s) implemented at the site.

A LUCIP will be developed to document the implementation of these LUCs. In addition, the LUCIP will designate Eglin Environmental Management Restoration (EMR) representative to be responsible for compliance with the LUCs, and the LUCIP will be referenced in appropriate Eglin planning documents. Further, if land use changes are required, the LUCIP and the LUCAP will address how the LUCs or remedy will be changed, if necessary.

By separate MOA dated December 23, 1999, with EPA and FDEP, Eglin on behalf of the Department of the Air Force, agreed to implement base-wide, certain periodic site inspection, condition certification and agency notification procedures designed to ensure the maintenance by Installation personnel of any site-specific LUCs deemed necessary for future protection of human health and the environment. A fundamental premise underlying execution of that agreement was that through the

Air Force's substantial good-faith compliance with the procedures called for therein, reasonable assurances would be provided to EPA and FDEP as to the permanency of those remedies which included the use of specific LUCs.

Although the terms and conditions of the MOA are not specifically incorporated or made enforceable herein by reference, it is understood and agreed by the Air Force, EPA and FDEP that the contemplated permanence of the remedy reflected herein shall be dependant upon the Installation's substantial good-faith compliance with the specific LUC maintenance commitments reflected therein. Should such compliance not occur or should the MOA be terminated, it is understood that the protectiveness of the remedy concurred on may be reconsidered and that additional measures may need to be taken to adequately ensure necessary future protection on human health and the environment.

PUBLIC PARTICIPATION FOR IRP SITE NO. OT-100

The public is encouraged to provide comments regarding the corrective action alternatives provided in this Statement of Basis, or any other remedial alternatives, including those not previously studied. The public can review information on the IRP at Eglin and the investigations and actions taken under the Permit, including all reports and documents. The information repository and administrative record files are available at the following locations:

Eglin Air Force Base AAC/EMR 207
Second Street, Building No. 216
Eglin AFB, Florida 32542-5133

Technical Library
203 West Eglin Blvd., Suite 300
Eglin AFB, Florida 32542-5429

FDEP
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400.
information, please contact any one of the following people:

Mr. Robert H. Pope

A 45-day public comment period will be held from September 1, 2000 to October 15, 2000.

Comments received will be summarized and responses will be provided in the upcoming Responses to Comments document. The Responses to Comments document will be prepared following the close of the public comment period. The Responses to Comments will be included with the final permit modification. If requested during the Public Comment Period, EPA will hold a public meeting to

respond to any oral comments or questions regarding this action. The public will be notified of the date, time, and place of any public hearing as soon as it is scheduled.

To request a hearing or provide comments for IRP Site No. OT-100, contact the following person in writing postmarked by October 15, 2000:

U.S. Environmental Protection Agency, Region IV
Federal Facilities Branch
61 Forsyth Street
Atlanta, Georgia 30303
Attention: Mr. Jon Johnston, Chief Federal Facilities Branch

To request further
U.S. Environmental Protection Agency, Region IV
Federal Facilities Branch
61 Forsyth Street
Atlanta, GA 30303
(404) 562-8506

Mr. Greg Brown, P.E.
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400
(850) 921-6779

Mr. Howard Mathews
Eglin Environmental Management Restoration
207 N. 2nd Street
Building 216
Eglin AFB, FL 32542
(850) 882-7791

IMPORTANT DATES TO REMEMBER:

Public Comment period begins September 1, 2000.

Public Comment period ends October 15, 2000.

REFERENCES

Eglin Air Force Base, *Tier I Partnering Team Meeting Minutes*, October 1997.

Eglin Air Force Base, *Tier I Partnering Team Meeting Minutes*, January 1998.

Eglin Air Force Base, *Tier I Partnering Team Meeting Minutes*, March 1998.

Eglin Air Force Base, *Guidelines for COPC Identification at Eglin AFB, Revision 3,* 1999, In press.

FDEP, Bureau of Waste Cleanup, *A Risk-Based Approach to the Protection of Human Health and Management of Environmental Impacts at Florida's Cattle Dip Vat Sites*, November 1995.

Hayes, L.R. and Barr, D.E., *Hydrology of the Sand-and-Gravel Aquifer, Southern Okaloosa and Walton Counties, Northwest Florida,* US Geological Survey, Water Resources Investigations Report 82-4110, 1983.

Maslia, M.L. and Hayes, L.R., *Hydrology and Simulated Effects of Ground-Water Development of the Floridan Aquifer System, Southwest Georgia, Northwest Florida and Southernmost Alabama,* US Geological Survey, Professional Paper 1403-H, 1988.

REI, *Preliminary Assessment Report POI No. 300 Cattle Dipping Vat - Shoal River,* January 1997.

REI, *Site Investigation Work Plan POI No. 300 Cattle Dipping Vat - Shoal River,* February 1997.

REI, *Interim Corrective Measures Work Plan, IRP Site No. OT-100 Cattle Dipping Vat - Shoal River,* February 1998.

REI, *Site Investigation Report POI No. 300 Cattle Dipping Vat - Shoal River,* April 1998.

REI, *Interim Corrective Measures Site Safety and Health Plan, IRP Site No. OT-100 Cattle Dipping Vat - Shoal River,* September 1998.

REI, *Interim Corrective Measures Report IRP Site No. OT-100 Cattle Dipping Vat - Shoal River,* March 1999.

U.S. Environmental Protection Agency, *RCRA Corrective Action Plan,* EPA 520-R-94-004, OSWER Directive 9902.3-2A, May 1994.

Woodward-Clyde Consultants, *Cattle Dipping Vat Assessment Program, A Summary Report,* January 1995.

ACRONYMS

ASC	Acceptable Soil Concentrations
bls	below land surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMIP	Corrective Measures Implementation Plan
COPC	Contaminant of Potential Concern
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethylene
EPA	U.S. Environmental Protection Agency
Eglin	Eglin Air Force Base
FDEP	Florida Department of Environmental Protection
FSCG	Florida Soil Cleanup Goal
HI	Hazard Index
HQ	Hazard Quotient
HSWA	Hazardous and Solid Waste Amendments
ICM	Interim Corrective Measures
IRP	Installation Restoration Program
LUC	Land Use Control
LUCAP	Land Use Control Action Plan
LUCIP	Land Use Controls Implementation Plan
mg/Kg	milligrams per kilogram (parts per million)
MCL	Maximum Contaminant Level
MOA	Memorandum of Agreement
NCP	National Contingency Plan
NFA	No Further Action
NGVD	National Geodetic Vertical Datum
NTU	Nephelometric Turbidity Unit
PA	Preliminary Assessment
PAH	polynuclear aromatic hydrocarbons
PCBs	Polychlorinated Biphenyls
POI	Point of Interest
RBC	Risk-based Concentration
RCRA	Resource Conservation and Recovery Act
REI	Rust Environment & Infrastructure, Inc.
SB	Statement of Basis
SI	Site Investigation
SVOC	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List
VOC	Volatile Organic Compound

GLOSSARY

Aquifer: Subsurface rock or sediment in a formation that is saturated and sufficiently permeable to yield economic quantities of water to wells and springs.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): Delegates authority for the President to take response actions to limit dangers resulting from the release of hazardous substances, Response actions must be performed in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan developed by the EPA. CERCLA was substantially amended in 1986 under the Superfund Amendments and Reauthorization Act. The stature imposes far-reaching liability for costs of cleanup on waste generators, transporters, and current and past owners of disposal sites.

Contaminants of Potential Concern (COPC): contaminants that represent an actual or potential threat to human health or the environment.

Corrective Measures Study (CMS): Study to develop and evaluate possible corrective measures.

Facility: Refers to a military base or other entire federal installation, whereas the term site refers to a particular area (such as an operable unit) making up only a portion of the facility.

Environmental Protection Agency (EPA): EPA is the federal agency responsible for implementing environmental laws enacted by Congress. State EPA offices or their counterparts implement state or federal environmental laws.

Groundwater: Subsurface water trapped in or moving through fractures, cracks, cavities, and pore spaces under the ground. Units that yield appreciable amounts of water to wells are aquifers; intervening units of low permeability are aquitards of confining units. The top of the zone of complete saturation is called the water table.

Hazard Quotient (HQ): The ratio of a single substance exposure level over a specific time period to a reference dose for that substance derived from a similar exposure period.

Hazardous and Solid Waste Amendments (HSWA): Amendments to RCRA, passed in 1984, which greatly expand the nature and complexity of activities covered under RCRA. They include the Federal Underground Storage Program.

Human Health Risk Assessment (HHRA): Study to determine the likelihood that a given exposure or series of exposures may have damaged or will damage the health of individuals.

Installation Restoration Program (IRP): The Air Force program designed to identify, investigate, and cleanup contamination associated with past Air Force activities at active AF installations; government-owned, contractor-operated facilities, off-site locations where contamination may have migrated; third party sites; and sites that the AF formerly owned or used.

Land Use Control Action Plan (LUCAP): A memorandum of Agreement (MOA) among Elgin, EPA, and FDEP designed to assure the effectiveness and reliability of the required Land Use Controls (LUCs) for as long as any LUC continues to be required in order for the remedial/corrective action to remain protective. **Land Use Control (LUC):** Is broadly interpreted to mean any restriction or control, arising form the need to protect human health and the environment, that limits use of and/or exposure to any portion of that property, including water resources. This term encompasses institutional controls, such as those involving real estate interests, governmental permitting, zoning, public advisories, deed notices, and other legal restrictions. The term may also include restrictions on access, whether achieved by means of engineered barriers such as a fence or concrete pad, or by human means, such as the presence of security guards. Additionally, the term may involve both affirmative measures to achieve the desired restriction (e.g., night lighting of an area) and prohibitive directives (no drilling of drinking waters wells). Considered altogether, the LUCs for a facility, in conjunction with the base master plan, will provide a blueprint for how its property should be used in order to maintain the level of protectiveness which one or more remedial/corrective actions were designed to achieve.

LUC Implementation Plan (LUCIP): A written plan, normally developed after a decision document has required one or more LUCs, for some particular area (operable unit, contaminated unit, and/or solid waste management unit). The LUCIP 1) identifies each LUC objective for that area (e.g., to restrict public access to the area for recreational use) and 2) specifies those actions required to achieve each identified objective (e.g., install/maintain a fence, post warning signs, record notice in deed records). LUCIPs specify what must be done to impose and maintain the required LUCs, and are therefore analogous to design and/or operation and maintenance plans developed for active remedies.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The NCP establishes procedures and standards for responding to releases of hazardous substances, pollutants and contaminants.

GLOSSARY (Continued)

Permit: A RCRA permit, issued for Eglin, establishes the facility's operating conditions for managing hazardous waste.

Potable Water: Water that is safe for drinking and cooking.

RCRA Facility Investigation (RFI): Evaluates the nature and extent of the releases of hazardous waste.

Reasonable Maximum Exposure (RME): The maximum exposure reasonably expected to occur in a population.

Resource Conservation and Recovery Act (RCRA) of 1976: Requires each hazardous waste treatment, storage, and disposal facility to manage hazardous waste in accordance with a permit issued by the EPA or a state agency that has a hazardous waste program approved by the EPA.

Site Investigation (SI): Physical inspection of a potential IRP site that may include limited soil and water sampling. Used to confirm results of PA or support of a site that does not present an environmental hazard.

Solid Waste Management Unit (SWMU): Any discernable unit (to include regulated units) at which RCRA solid waste have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste.

Statement of Basis (SB): The RCRA decision document that specifies the site remedy and establishes LUCs.

U.S. Environmental Protection Agency (EPA): The federal agency responsible for implementing environmental laws enacted by Congress.

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INTERSTATE 10

TO PENSACOLA

INTERSTATE 10

Santa Rosa County

Okaloosa County

IRP SITE
NO. OT-100

Aux. Field
No. 3 (Duke Field)

Aux. Field
No. 6

Aux. Field
No. 5

Aux. Field
No. 2

STATE ROUTE 85

STATE ROUTE 285

INTERSTATE 10

TO
TALLAHASSEE

Aux. Field
No.1

HIGHWAY 331

Aux. Field
No. 10

Aux. Field
No. 7

Aux. Field
No. 4

STATE ROUTE 87

123 BYPASS

NICEVILLE

PORTLAND

FREEPORT

HIGHWAY 20

HIGHWAY 331

Eglin
Main Base

EGLIN
PARKWAY

East Bay

Choctawhatchee
Bay

Choctawhatchee
Bay

MID-BAY
BRIDGE

Walton County
Okaloosa County

331 BRIDGE

NAVARRE

FT. WALTON
BEACH

DESTIN

TO PENSACOLA

HIGHWAY 98

Santa Rosa Sound

Santa Rosa Sound

SANTA ROSA ISLAND

SANTA ROSA ISLAND

RANGE ROAD 242

HIGHWAY 98

TO
PANAMA CITY

SCENIC
HIGHWAY 98

Gulf of Mexico

LEGEND

EGLIN AFB RESERVATION BOUNDARY

HIGHWAYS

EGLIN AFB TEST AREA

COUNTY LINE

0 2 4 8

1 INCH = 4 MILES

EARTH TECH

FIGURE 1
IRP SITE NO OT-100
CATTLE DIPPING VAT - SHOAL RIVER
SITE LOCATION MAP
EGLIN AIR FORCE BASE, FLORIDA

FEBRUARY 2000

PROJECT NO. 40298

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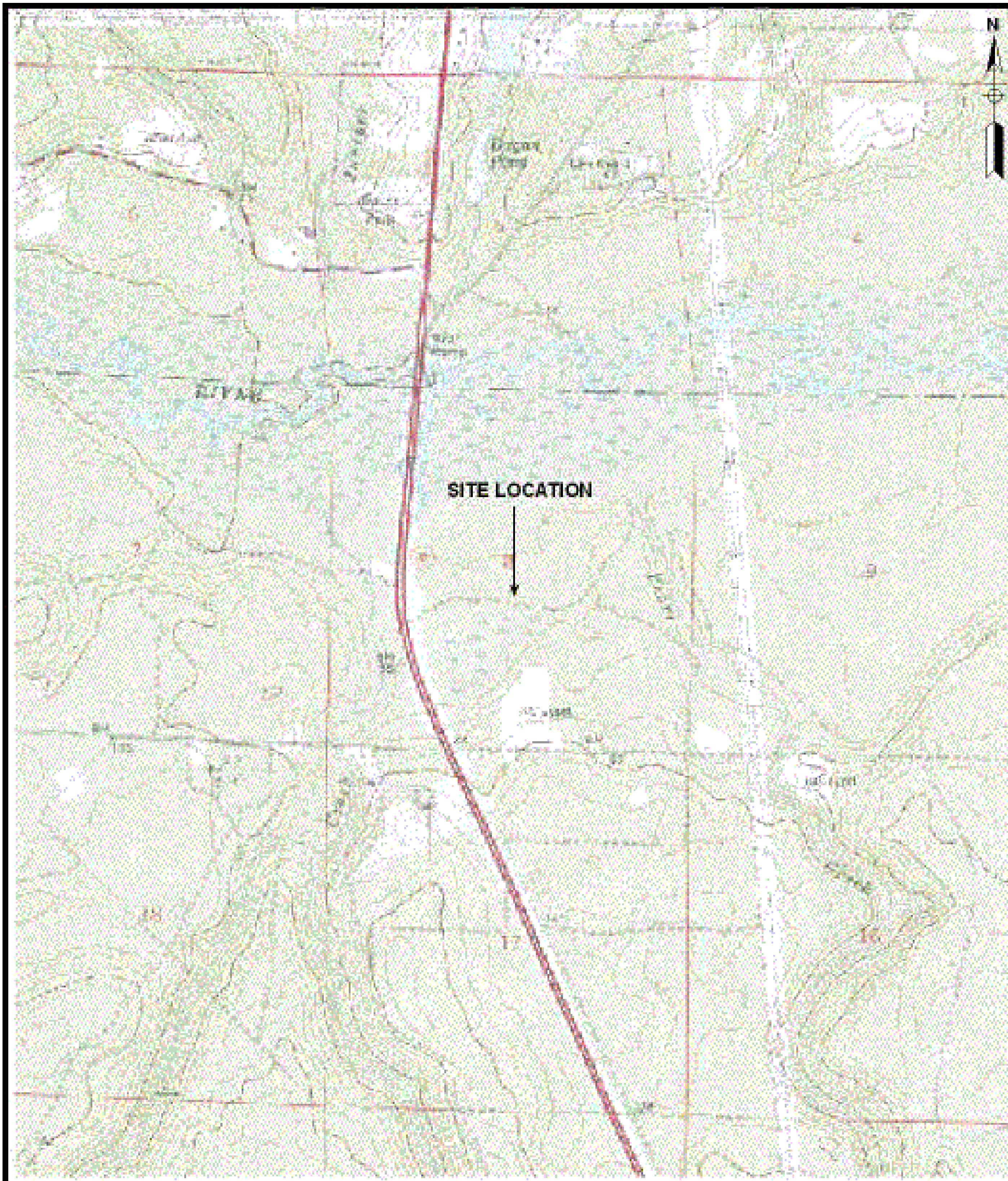


Scale 1:24000

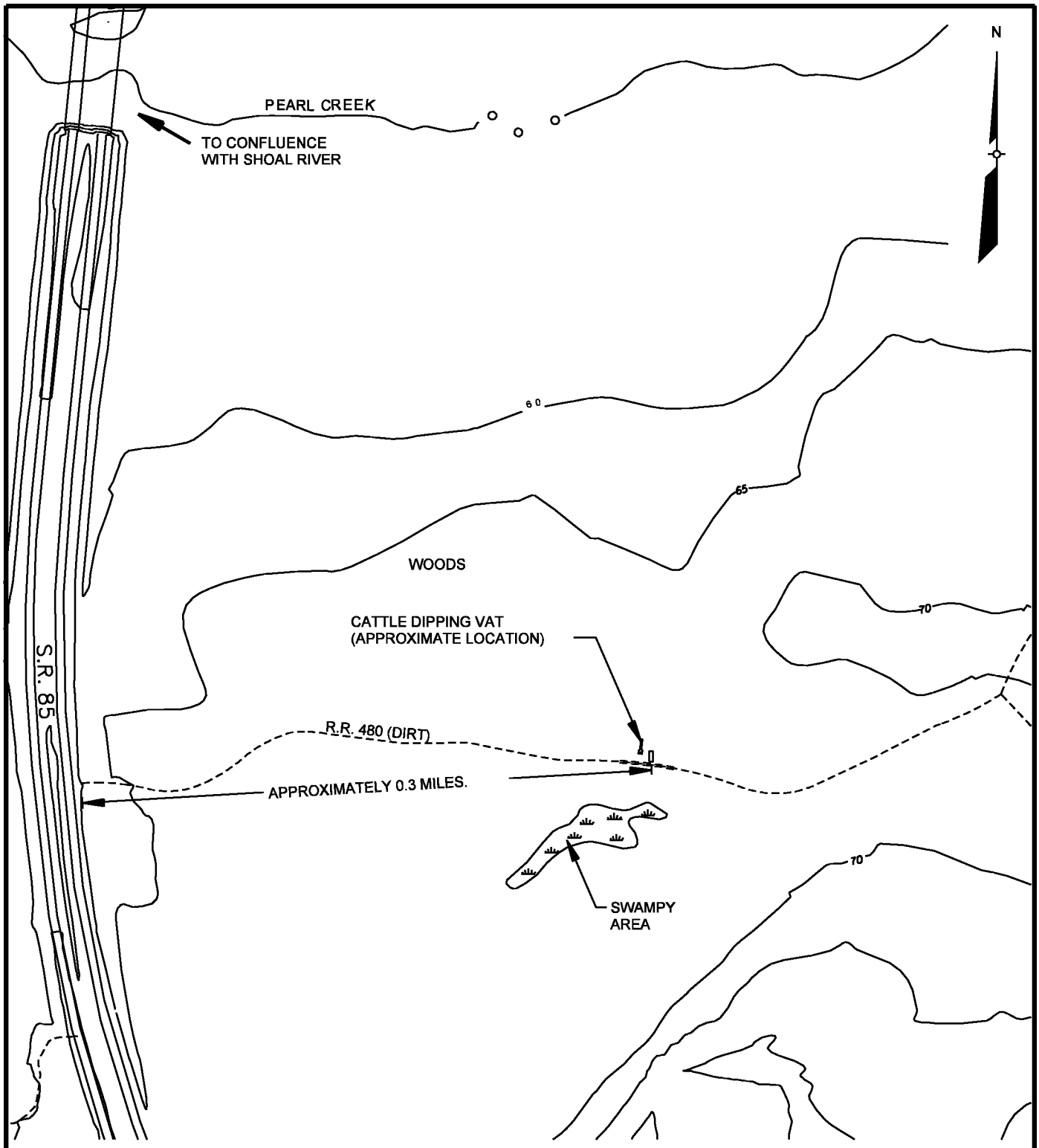
0 1000 2000 3000 4000 5000 6000

Ref: U.S.G.S., 7.5 min Quadrangle Crestview South, FL, 1973, PR 1987.

EARTH TECH
A tyco INTERNATIONAL LTD. COMPANY

FIGURE 2
IRP SITE NO. OT-100
CATTLE DIPPING VAT-SHOAL RIVER
SITE AND VICINITY MAP
EGLIN AIR FORCE BASE, FLORIDA
PROJECT NO. 55056.000

IRPSIT~1.JPG



BASE MAP PRODUCED FROM BASE COMPREHENSIVE PLAN MAPPING, US ARMY ENGINEERING DISTRICT, MOBILE, AERIAL PHOTO DATES: DECEMBER 25 & 26, 1993.

CONTOUR INTERVAL = 5 FEET.

EARTH TECH

FIGURE 3
IRP SITE NO. OT-100
CATTLE DIPPING VAT - SHOAL RIVER
SITE LAYOUT MAP

EGLIN AIR FORCE BASE, FLORIDA
PROJECT NO. 40298

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